

**Savannah River Site
Solid Waste Management Department
Consolidated Incinerator Facility Project
Training Program**

**CONSOLIDATED INCINERATOR FACILITY
WASTE HANDLING FOR WASTE
GENERATORS (U)**

Study Guide

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Training Manager / Date

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Facility Manager / Date

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TABLE OF CONTENTS

TABLE OF CONTENTS	3
LIST OF FIGURES	4
LEARNING OBJECTIVES	6
Terminal Learning Objective	6
Enabling Learning Objectives	6
LESSONS LEARNED - SEG RELEASE.....	9
WASTE HANDLING AT THE CONSOLIDATED INCINERATOR FACILITY.....	12
Overview of Waste Handling at the Consolidated Incinerator Facility.....	12
WASTE GENERATOR DUTIES AND RESPONSIBILITIES	14
Waste Handling Duties.....	14
Waste Minimization Duties and Opportunities.....	15
IDENTIFICATION OF WASTE STREAMS AND HAZARDOUS WASTE.....	17
Identifying and Segregating Waste Streams/Waste Types	17
and Hazardous Waste	17
CIF Waste.....	19
Identifying Hazardous Waste	22
PACKAGING, HANDLING, AND TRANSPORTATION	25
Incinerable Waste	25
CIF Acceptable and Prohibited Waste	29
Non-Incinerable Solid Waste	30
Waste Container Markings and Labeling.....	32
Non-Incinerable Waste Packaging	34
Additional Marking and Labeling requirements	34
Empty Containers.....	37
Waste Storage.....	37
Waste Transfer	38
SATELLITE ACCUMULATION AREA AND STAGING AREA REQUIREMENTS	39
Satellite Accumulation Area	39
Staging Area.....	41
WASTE HANDLING DEFINITIONS.....	44

LIST OF FIGURES

FIGURE 1 CIF GENERAL WASTE CHARACTERIZATION	18
FIGURE 2 CIF WASTE STREAMS	20
FIGURE 3 CIF WASTE STREAMS	21
FIGURE 4 DISPOSAL SHEET TRACEABILITY LOG	26
FIGURE 5 WASTE DISPOSAL LOG SHEET	27
FIGURE 6 BARCODE LABEL PLACEMENT	33
FIGURE 7 WASTE MARKINGS COLOR CODING	34
FIGURE 8 SHIPPING CONTAINER ASSIGNMENT ROSTER	35
FIGURE 9 LOADING SCHEDULE	36
FIGURE 10 SAA POSTING REQUIREMENT	40
FIGURE 11 SA AREA POSTING REQUIREMENT	41

1. 261-SOP-CHAR-01, CIF Waste Characterization and Certification Procedure
2. 261-SOP-SSW-01, CIF Packaging, Handling, and Transportation
3. ECM Procedure 6.2, Sanitary Waste Management and Disposal
4. ECM Procedure 6.3, Hazardous Waste Determination
5. ECM Procedure 6.9, Hazardous or Mixed Waste Management at Satellite Accumulation Areas
6. ECM Procedure 6.21, Hazardous or Mixed Waste Management at Staging Areas
7. ECM Procedure 6.11, Waste Minimization
8. WAC 3.01, Introduction, SRS Waste Management, Solid and Hazardous Waste Operations
9. WAC 3.02, General Criteria _ WSRC Solid and Hazardous Waste Operations
10. WAC 3.07, Mixed Waste Storage Facility _ Mixed Waste Acceptance Criteria
11. WAC 3.08, Hazardous Waste Building - Non-radioactive Hazardous Waste Acceptance Criteria
12. WAC 3.10, E-Area Vaults Low-Level Radioactive Solid Waste Acceptance Criteria
13. WAC 3.13, Consolidated Incineration Facility Waste Acceptance Criteria

LEARNING OBJECTIVES

Terminal Learning Objective

- TO 1.00 **IDENTIFY, CHARACTERIZE, PACKAGE, and SEGREGATE** waste generated as a result of the CIF maintenance and operation programs. Waste handling shall be conducted in accordance with the applicable CIF procedures.
- TO 2.00 **ESTABLISH AND MAINTAIN** the appropriate waste storage areas required to house hazardous and mixed waste. These areas are to meet the requirements of the applicable CIF procedures.

Enabling Learning Objectives

- ELO 1.01 DEFINE the following waste handling terms:
- | | |
|---------------------------------------|-------------------------|
| a. Certified Waste | i. Shipping Container |
| b. Characteristic Waste | j. Solid Waste |
| c. Hazardous Waste | k. Waste Container |
| d. Listed Waste | l. Waste Generator |
| e. Low-Level Waste | m. Waste Minimization |
| f. Mixed Waste | n. Waste Package |
| g. Non-Regulated Waste | o. Waste Receptacle |
| h. Secondary Containment | p. Waste Stream |
- ELO 1.02 STATE the responsibilities and duties of the Generator Certification Official at the CIF.
- ELO 1.03 STATE the responsibilities and duties of Waste Generators at the CIF.
- ELO 1.04 Given waste handling situations, DESCRIBE opportunities and techniques for attaining waste minimization.

- ELO 1.05 STATE the characteristics of the following waste streams:
- a. Environmentally Derived
 - b. Secondary
 - c. Incidental
- ELO 1.06 Given examples of waste normally encountered in a Contamination Area (CA), correctly SEGREGATE the waste by waste stream/waste type.
- ELO 1.07 Describe the purpose of the CIF “Burn Campaign”.
- ELO 1.08 Determine the appropriate waste receptacle, based upon the type of waste generated.
- ELO 1.09 Complete a Waste Disposal Log Sheet for establishing a waste receptacle and when adding waste to the receptacle.
- ELO 1.10 Identify Acceptable and Prohibited CIF waste items.
- ELO 1.11 Describe the purpose and use of a “Blue Tag”.
- ELO 1.12 Describe the Waste Container Marking and Labeling requirements.
- ELO 1.13 Identify a correctly placed barcode, on a 21 inch cardboard box.
- ELO 2.01 Define the following terms.
- a. Satellite Accumulation Area
 - b. Staging Area
- ELO 2.01 Describe the physical requirements for establishing a Satellite Accumulation Area, including any time requirements place on the collection/removal of waste.
- ELO 2.03 Describe the relationship between a waste receptacle and a Satellite Accumulation Area.
- ELO 2.04 Describe the physical requirements for establishing a Staging Area, including any time requirements place on the collection/removal of waste.

ELO 2.05 Describe the relationship between a waste container and a Staging Area.

ELO 2.06 Describe the personnel enter requirements for a Staging Area.

LESSONS LEARNED - SEG RELEASE

Waste Minimization Practices are necessary for all individuals and facilities throughout the SRS Complex. Waste minimization can be accomplished through any of the following mechanisms.

- **Source Reduction** - elimination or reduction of waste generated at the source, usually within the process
- **Recycling** - use or reuse of a material in lieu of disposal
- **Treatment** - action taken to change the physical, chemical, or biological characteristics or composition of waste (LH Column: incineration, vitrification, volume reduction)

The Scientific Ecology Group (SEG) is a private company in Oak Ridge , Tennessee, under contract to WSRC to reduce the volume of waste produced at the Savannah River Site. For every ten full B-25 boxes sent to SEG, SRS receives back nine empty and one full B-25 box. This is a ten to one volume reduction. This is a significant reduction in the amount of waste that must be stored in site storage vaults, thus extending the life of the site storage vaults.

On March 1, 1996, the SEG was processing Low-Level Radioactive (LLR) waste from the Savannah River Site (SRS), which included waste from the Defense Waste Processing Facility and the Tritium Facility. The tritium content was manifested in the millicurie range. Three of the B-25 boxes had been processed (shredded and compacted) without incident. During the processing of the fourth B-25 box, SEG received an off-gassing alarm. SEG sampled the stack monitoring and the results indicated a release of 4.5 curies tritium or 24 times the SEG daily stack limit. All processing at SEG was stopped. Subsequent to the release, SEG pumped 23 - 55 gallon drums of liquid from the compactor sump. An analysis indicated that the liquid contained approximately 60 curies of tritium. Elevated tritium release rates of approximately 2.6 curies were monitored 17 days after the incident.

- On March 20, 1996, The Tritium Facility Manager suspended Tritium Facility shipments of LLW.
- On April 16, 1996, the State of Tennessee amended SEG's license to suspend the shipment of waste from WSRC to SEG.
- Additionally, Solid Waste stopped accepting waste.

An investigation into the cause of the event concluded that a pump bellows removed from a primary containment pump was improperly characterized as job control waste vice process waste, resulting in an improper curie calculation of the B-25 box.

Root Cause: Conduct of Operations- Inadequate procedure compliance

- Not completing waste tags correctly
- Not completing manifest correctly
- Not performing the radiological calculations correctly

Contributing Causes

- Inadequate Training - Failure of personnel to recognize the waste streams and the importance of keeping waste streams separated
- Inadequate Procedures - Insufficient detail related to identification of process equipment
- Lack of sensitivity to the impact of improper waste handling.

Prevention

- Keep Waste Streams separated
- Keep prohibited items out of LLW containers
- Ensure proper documentation

“Ask if you don’t know” - Individual Responsibilities

- Understand waste streams and keep waste separated
- Keep prohibited materials out of waste streams
- Complete waste tag correctly
- Understand lessons learned

Lessons Learned

1. Inadequate attention to detail in managing waste activities results in misidentification of waste for shipment
 - Incomplete tagging of waste

- Untagged waste bags
 - Incomplete and incorrect entries in waste tracking log
 - Repeated errors in segregation and or treatment of free liquid
 - Repeated procedure violation
2. Segregation errors resulted in mischaracterization of waste.
- Other waste streams were combined with step off pads type waste. Caused waste to be dealt with as one individual type of waste when it should have been handled separately.
3. Lack of in-depth training for some Tritium waste management personnel contributed to the inability to identify program weakness.
- No site standard to train the waste handling personnel.
4. Inadequate characterization plans and methodologies resulted in improper segregation and characterization of waste.
- Lessons learned for this are specially for GCO and Solid Waste Engineering.
5. Insufficient management attention and ineffective self assessment to identify and correct waste management deficiencies has resulted in mischaracterization of waste.
- Obvious program weaknesses were not being identified and corrected by generators.
 - Self assessments are written more for document review than actual field performance.
 - No performance indicators to trend waste management performance

WASTE HANDLING AT THE CONSOLIDATED INCINERATOR FACILITY

ELO 1.01	DEFINE the following waste handling terms:	
a.	Certified Waste	h. Shipping Container
b.	Characteristic Waste	i. Solid Waste
c.	Hazardous Waste	j. Waste Container
d.	Listed Waste	k. Waste Generator
e.	Low-Level Waste	l. Waste Minimization
f.	Mixed Waste	m. Waste Package
g.	Non-Regulated Waste	n. Waste Receptacle
h.	Secondary Containment	o. Waste Stream

Overview of Waste Handling at the Consolidated Incinerator Facility

To understand the waste generation and handling process, it is important to become familiar with the appropriate terminology. Definitions are found in the glossary located in the back of the book.

Processing and storing waste are the most important functions of Solid Waste Department. In the daily activities of processing and storing waste, waste is also generated.

The waste that is the subject of this course is the solid waste generated as we process the radioactive and hazardous material received from other SRS facilities. Solid Waste is any material that is to be discarded or for which there is no further use. All waste generated while doing our jobs – material for which there is no more use and which must be discarded – must be disposed of properly: tools, supplies, chemicals, hut materials, replacement parts and equipment, paper, towels or rags, dress-out clothes, and scrap paper. All of these and more must be disposed of properly as solid waste.

To properly dispose of waste, it must be carefully segregated (separated) into specific categories, packaged, and tagged. It must be shipped in proper containers, and the entire process must be completely documented. Specific categories of solid waste are stored or shipped to designated locations for disposal. Those various categories of solid waste are

called waste streams and waste types. All wastes must be certified to meet the Waste Acceptance Criteria (WAC) of the receiving facility. Certified Waste is solid waste that is confirmed to comply with the waste acceptance criteria of the receiving Treatment, Storage, and Disposal (TSD) facility

The temporary or permanent storage of any type of waste is extremely expensive. Because of the cost, it is important that as much of our radioactive waste as possible is segregated and packaged so that it is acceptable at the designated SRS TSD facility. For instance, only Low-Level waste with NO hazardous waste is acceptable for storage in the E Area Vaults. A Consolidated Incinerator Facility error in segregating, packaging, or labeling could result in E Area Vaults closing its facility to our waste. If the E Area Vaults were to inadvertently receive hazardous or other inappropriate material from the CIF, our ability to ship waste would be suspended. In addition, the Site could be subject to stiff fines and penalties. Routine operations at the Consolidated Incinerator Facility are severely impacted if the right to ship waste is lost.

Summary

Waste sent to an SRS Treatment, Storage, and Disposal facility must meet the Waste Acceptance Criteria for the facility. Waste that meets the waste acceptance criteria of the specific facility is called Certified Waste. The Shipment of non-certified waste to a TSD could result in suspension of shipping privileges, fines, and penalties.

WASTE GENERATOR DUTIES AND RESPONSIBILITIES

ELO 1.02	STATE the responsibilities and duties of the Generator Certification Official at the CIF.
ELO 1.03	STATE the responsibilities and duties of Waste Generators at the CIF.
ELO 1.04	Given waste handling situations, DESCRIBE opportunities and techniques for attaining waste minimization.

Waste Handling Duties

Waste Handling involves two sets of job duties. These job duties are Generator Certification Official (GCO) and Waste Generator (WG).

One job duty common to both jobs is to work safely, focusing on observing perfect industrial and ALARA – As Low as Reasonably Achievable – work practices. Those who handle waste must read and follow all safety requirements in the applicable procedures, follow the supervisor's instructions and those given by RadCon on the job, and use common sense.

The Generator Certification Official, usually called the GCO, is the facility representative responsible for managing waste to ensure that it meets the requirements of the receiving facility. The GCO handles most of the administrative duties requiring official signatures, such as manifests and shipping. The facility GCO will be able to solve almost any waste handling problem.

The primary focus of this course is on the job of the individual Waste Generator. Waste Generator is any individual or facility that produces waste for treatment, storage, or disposal. Waste Generator at CIF are empowered the with ensuring that work is conducted safely, incorporating waste minimization practices to reduce the volume of waste. The following are the main duties of the Waste Generator.

- Works safely, following all safety rules;
- practices waste minimization and waste reduction;
- segregates waste, separating it by waste stream or waste type;
- places the waste in labeled receptacles;

- places the waste in plastic bags, or the case of liquid in a 55-gallon drum, clearly tagged;
- completing the Waste Disposal Log Sheet for the waste added to the receptacle,
- placing bagged waste in the appropriate shipping container,

Only qualified Waste Generators will be allowed to handle waste and complete the appropriate sections of the Waste Disposal Log Sheet

Waste Minimization Duties and Opportunities

One of the first duties of a Waste Generator is to minimize and reduce the amount of waste generated. Not only does reducing the waste we produce protect the environment by saving space in landfills and monitored storage facilities, there are other benefits: If waste is truly minimized, there will be less waste to handle, and we will save a substantial amount of money.

One of the best ways to minimize waste is source reduction. Source reduction is simply not producing waste. There are many proven techniques for source reduction including pre-job planning meetings, substituting products, procedure changes, and good operating practices. Good operating practices are the actions over which you have the most control. One of the most important contributions you can make is to take into a Contamination Area, generally called a "CA," only the items and amounts of material absolutely necessary to do the job. Once items are taken into the CA, they should be used up before bringing more in. One way to minimize waste and still get the job done is to have someone outside the CA hand materials in only as they are needed.

Unless an item is cleared by RadCon, it can never leave the Contamination Area except as waste to be stored forever. Many materials, such as soil, particulate or fine powder, metal parts with crevices and cracks, and liquids are very difficult to clear. Considering the costs for storage and disposal, constantly being on the look-out for ways to reduce waste will certainly pay off on the job.

There are two additional ways to reduce waste: recycling and treatment. Examples of waste recycling include used oil reprocessing, white paper recycling, refilling laser cartridges, and allowing items to be reused through salvage sales. The main economy of recycling is not the value of the material recycled; it is the storage space saved by finding alternate uses of the material. Examples of waste treatment include incineration, evaporation, and compaction. A Waste Generator has many opportunities to contribute to waste treatment efforts by learning to segregate waste properly. The GCO is always available for assistance. Any new ways or ideas to reduce the amount of waste generated, should be suggested to the GCO.

Examples of Waste Minimization Techniques.

- **Inventory Management Control** - Reduce excess quantity of on-hand materials.
- **Revising Operating Procedures** - Incorporate techniques.
- **Revise Maintenance Programs** - Reduce generation cause by failed equipment.
- **Improve Material Control** - No hazardous material policy; advanced job planning
- **Employee Awareness Training**

Examples of Waste Reduction Practices.

- **Unpacking of Materials** - Unpack in non-radiological areas
- **Used Oil Disposal** - Collect and burn during designated campaign
- **Control of Shipping Containers** - Ensure WAC Compliance
- **Salvage Recyclable and Reusable Materials**
- **Disposition of Excess Chemical** - Return for use elsewhere on the site.

Summary

As Waste Generators, you are responsible to work safely and efficiently. Safely means following industrial safety rules (8Q), practicing ALARA, minimizing waste generation, and when generated properly segregating waste and placing it in the properly labeled Waste receptacle. A Waste Receptacle is a bin or other temporary storage vessel used for collecting waste before the waste is tagged to be placed in a container.

IDENTIFICATION OF WASTE STREAMS AND HAZARDOUS WASTE

ELO 1.05 STATE the characteristics of the following waste streams:

- a. Environmentally Derived
- b. Secondary
- c. Incidental

ELO 1.06 Given examples of waste normally encountered in a Contamination Area (CA), correctly SEGREGATE the waste by waste stream/waste type.

ELO 1.07 Describe the purpose of the CIF “Burn Campaign”.

Identifying and Segregating Waste Streams/Waste Types and Hazardous Waste

Knowing the details of the jobs to be done, the Generator is in the best position to anticipate waste to be Generated. Also some of the information required on the work request form will help in identifying waste streams. A waste stream is a unique waste form or type that encompasses all aspects of the waste from generation to storage or disposal – a result of the waste having come from a similar source with the same or very similar radiological, physical, and chemical characteristics

Segregating waste – separating it by waste streams or waste type – is the part of the Generator's job that requires the most knowledge and judgment. Waste types are general descriptions of types of waste that have not been characterized. Waste characterization is the determination of the physical, chemical, and radiological properties of a waste. Waste characterization is used to quantify the radioactive and hazardous content of the waste in order to provide reasonable levels of exposure protection from radioactive and hazardous constituents and ensure that site storage and disposal activities will not adversely affect the environment.

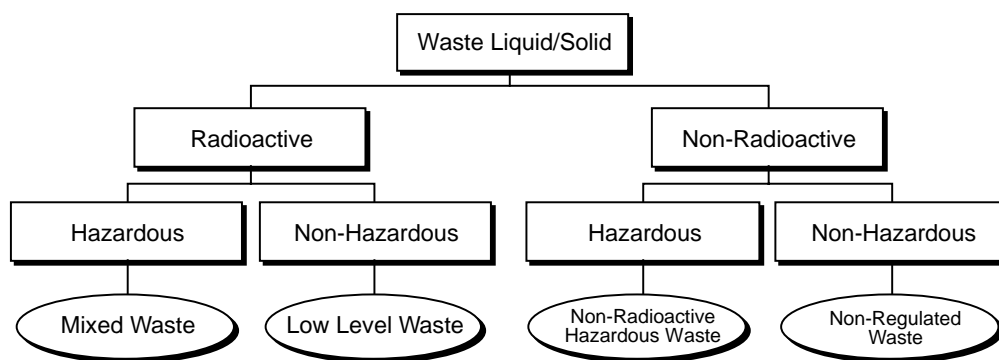
Waste streams are established as a result of the requirement for waste characterization. Therefore, if it is known that a waste is a unique type or form; that is, it is known where the waste comes from and all the places it has been; and the physical, chemical, and radiological properties of the waste are known, it can be established that the waste is a part of a waste stream. Solid Waste Engineering performs waste characterization and provides the

information needed to identify waste streams. If waste were not categorized by waste streams, the characteristics of the waste would have to be determined by sampling and analysis. Although sampling and analysis is performed when necessary, it would be extremely expensive and time-consuming to analyze every item before disposal.

To segregate waste and properly describe it on the Waste Disposal Log Sheet, the Generators must be knowledgeable of the waste streams in their facilities. Waste is generated from routine activities such as facility operations, maintenance activities such as equipment repairs, routine surveillances, general decontamination, and general housekeeping. The waste streams for the CIF include.

- **Environmentally Derived Waste** - Waste resulting from natural events such as storms. This includes rain water, dust, and debris.
- **Secondary Waste** - A waste that is a by-product of the waste treatment process. This includes ashcrete and solidified blowdown.
- **Incidental Waste** - A waste that is generated by maintenance activities (including job control waste and excess equipment), spills, and leaks.

Waste can be in the form of liquid or solid. Each must be packaged appropriately according to the waste characterization. Each waste stream must be further characterized according to the makeup of the waste. In general, incinerable and non-incinerable waste is segregated as shown in Figure 1.



ET-815

Figure 1 CIF General Waste Characterization

CIF Waste

The resultant waste from the CIF operations can be either liquid or solid; radioactive or non-radioactive; hazardous or non-hazardous. These waste characteristics determine the final disposal facility for the waste.

Incidental waste is facility waste from either maintenance activities, or from a spill or leak. If a spill or leak should occur, Operations personnel should conduct EOP-3 for spill mitigation and containment. Refer to Figure 2.

All incidental waste should be looked at for reuse, before disposal. For example a piece of equipment removed from the process should be looked at to see if it could be used in another application.

Unused chemicals should be returned to the excess chemical facility for reuse. The chemical must be returned in its original labeled container.

Secondary waste is a CIF waste by-product of incinerator operations. Secondary waste includes ashcrete and solidified blowdown. Refer to Figure 2.

Environmentally Derived Waste must be segregated and characterized just as incidental waste. Water from rain fall, in a sump, may be released directly back to the environment, if it is known not to be contaminated with radioactive or hazardous materials. All other waste must be sampled to determine if hazardous or radiological constituents exist. Refer to Figure 3.

Wastes that are incinerable and meet the CIF Waste Acceptance Criteria are burned during a burn campaign. A Burn Campaign ensures like waste and only like waste is burned during a specific time period, in order to minimize the production of hazardous and mixed waste. Burn Campaigns are divided into two groups as follows.

Listed Burn Campaign

- Waste feed has listed hazardous constituents.
- Produces Non-Radioactive Hazardous Waste and Mixed Waste.
- Secondary Waste must be sent to the Hazardous Waste Storage Facility or the Mixed Waste Storage Facility.

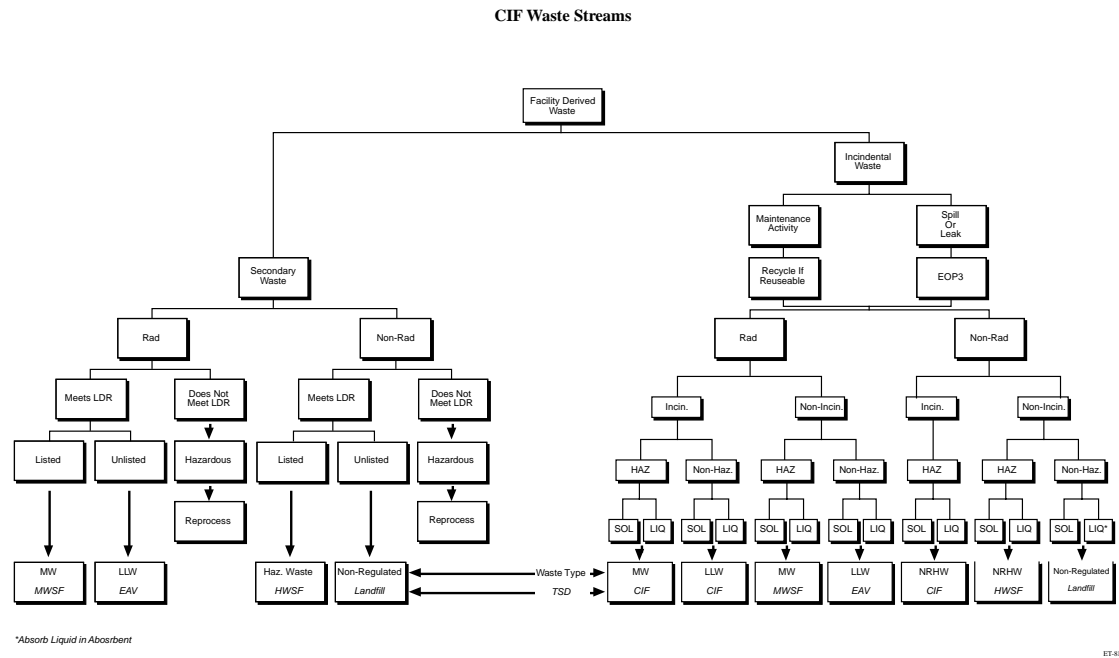
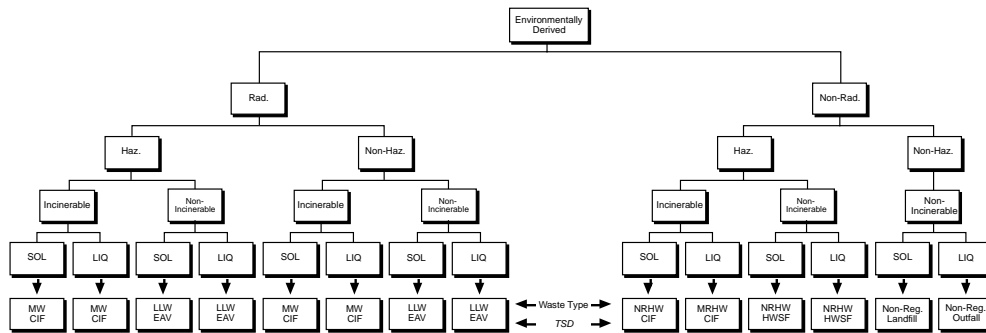


Figure 2 CIF Waste Streams

CIF Waste Streams



ET-813b

Figure 3 CIF Waste Stream

Non-Listed Burn Campaign

- Waste feed is Low-Level Waste or Characteristic Hazardous Waste.
- Produces Non-Regulated Waste and Low-Level Waste.
- Secondary Waste sent to the E Area Vaults or Sanitary Landfill.

Non-incinerable waste are sent to the Mixed Waste Storage Facility (MWSF), E Area Vaults (EAV), Hazardous Waste Storage Facility (HWSF), or to the landfill. Each storage facility has its own Waste Acceptance Criteria that must be met before the waste can be received at the facility.

Identifying Hazardous Waste

Knowledge of the Blue Dot program is necessary for the Generator, because the blue sticker on containers helps to identify a large portion of the hazardous waste encountered in Solid Waste.

As of October 31, 1994, materials ordered either on- or off-site for use in the CIF are delivered to a single Material Delivery Point (MDP) located at 241-102H. At the Material Delivery Point, all chemical products are evaluated for hazardous content. If a product has a hazardous constituent, a Blue Dot is affixed to the container. When a hazardous chemical is furnished to anyone in Solid Waste, a Blue Dot label is on the container, even if only a small amount is furnished.

The Generator should also be aware of the responsibilities concerning the labeling of containers: If one pours a chemical from a Blue Dot container to another container, the person is responsible for labeling the new container.

To be specific, Blue Dot chemicals contain hazardous constituents, and are not hazardous waste. The chemicals are hazardous waste only when they are discarded.

In addition to discarded Blue Dot products, there are additional ways to identify hazardous waste: Most of the waste generated at the CIF will be from waste that is received from other facilities. These wastes will be identified using an EPA waste code for Hazardous waste. A chemical or substance is a hazardous waste if it meets any one of the following criteria.

- Appears on a hazardous waste list contained in 40 CFR 261 (Listed), or
- Exhibits one or more of the four hazardous characteristics (Characteristic or Unlisted), which are:
 - Ignitable
 - Corrosive
 - Reactive
 - Toxic

Although a complete list is not possible in this course, there are many common examples including the following.

- Mercury
- Sodium Hydroxide
- Cadmium
- Acids and Caustics
- Most solvents, including acetone, benzene, and toluene
- Benzene, and chemicals which produce benzene, such as Sodium Tetraphenylborate
- Gasoline, oil, and petroleum products – depending on the quantity, whether they are mixed with other materials, and where they are located
- PCBs, for example, certain oil from transformers or certain fluorescent light ballast

Summary

Waste must be segregated into its specific waste stream. The CIF has three major waste streams (1) Environmentally Derived Waste; (2) Secondary Waste; and (3) Incidental Waste. Each of these waste streams must be further segregated by (1) radioactive or non-radioactive; (2) hazardous or non-hazardous; and (3) incinerable or non-incinerable.

The CIF burns waste based upon waste types. There are two basic types of burn campaigns (1) Listed Burn Campaign and (2) Non-Listed Burn Campaign. Waste is separated in burn campaigns to continue the process of waste separation and waste minimization.

The Blue Dot program, identifies hazardous substance by placing a Blue Dot on the container. This indicates that any waste generated using the chemical must be disposed as hazardous waste. An empty container, with a Blue Dot, is not hazardous waste.

PACKAGING, HANDLING, AND TRANSPORTATION

ELO 1.08	Determine the appropriate waste receptacle, based upon the type of waste generated.
ELO 1.09	Complete a Waste Disposal Log Sheet for establishing a waste receptacle and when adding waste to the receptacle.
ELO 1.10	Identify Acceptable and Prohibited CIF waste items.
ELO 1.11	Describe the purpose and use of a “Blue Tag”.
ELO 1.12	Describe the Waste Container Marking and Labeling requirements.
ELO 1.13	Identify a correctly placed barcode, on a 21 inch cardboard box.

Incinerable Waste

Incinerable waste packaging consist of 21” X 21” X 21” cardboard boxes (21 inch box) or 55-gallon two bung-hole drums. Solid waste is stored in 21 inch boxes and liquids stored in 55-gallon drums. If it is anticipated that the waste receptacle will not be completely filled during an evolution, a Satellite Accumulation Area must be established to store the waste. Satellite Accumulation Area is covered under Satellite Accumulation Area and Staging Area Requirements, later in this book.

To establish a solid waste receptacle, obtain and inspect a 21 inch cardboard box. The box must not have any rips, tears, bulging, broken seams, or other indications of damage. A polyethylene or non-chloride based bag is inspected and placed in the box. Yellow bags must be used for radioactive waste and clear bags for non-radioactive waste. The bags must not have any rips, tears, holes, or other signs of damage.

To establish a liquid waste receptacle, obtain and inspect a 55-gallon two bung hole drum. The drum must not have any holes, bulging, broken seams, or other indications of damage. A spill kit appropriate for the waste being transferred must be in the area when transferring waste.

The GCO enters the waste receptacle information into the Disposal Sheet Traceability Log (Figure 4) and a Waste Disposal Log Sheet (Figure 5) is completed for the receptacle.

The GCO Records a package number for the new receptacle. The number is an eight digit number. The First character is either an I (Incinerable) or an N (Non-incinerable). The next three characters identify the building from where the waste originated. The last four characters are a sequential number. The following example is for incinerable waste generated in Building 261 and is the first package logged on the Disposal Sheet Traceability Log.

I 2 6 1 0 0 0 1

Package #	Waste Stream #	Initials Performer	of	Date Issued	Date Sealed

Figure 4 Disposal Sheet Traceability Log

The Waste Disposal Log Upper section is completed up to Section A prior to placing any waste into the receptacle. Refer to Figure 5.

Waste Stream Number	Identifies the unique waste stream. Only waste with that number may be placed in the receptacle.
Building Number	Enter the building number from where the waste is generated.
Package Number	From the GCO's Disposal Sheet Traceability Log.
Waste Type	Check the appropriate waste type (Figure 2)
Waste Class	Is the waste incinerable - Meets the requirements of the CIF Waste Acceptance Criteria
Hazard Classification	For NRHW or MW only - Characteristic (unlisted - "D" Hazardous Waste Codes) or Listed

Before any waste can be placed in the receptacle, certain minimum labeling is required. The minimum labeling for solid incinerable is: the Waste Package Number and waste stream number. The Waste Disposal Log Sheet must be kept with the waste receptacle. Before the generator places any waste in the receptacle, the generator must verify that the receptacle and the generated waste have the same waste stream number. Section A of the Waste Disposal Log Sheet must be completed for every item added to the waste receptacle. Section A contains a place for the description of the materials placed in the waste receptacle, the date it was added, and the initials of the person adding the materials.

WASTE DISPOSAL LOG SHEET

Waste Stream # _____ Building # _____ Package # _____

Waste Type: Non-Regulated () NRHW () LLW () MW ()

Waste Class: Incinerable () Non-Incinerable ()

Hazard Classification (Incinerable Waste Only): Characteristic Only () Listed ()

Hazard Code: Ignitable () Corrosive () Corrosive Alkaline () Corrosive Acid ()

(NRHW and MW Only) Reactive () Toxic () Toxicity Characteristic () Acute Hazardous ()

Section A

Initials	Date	Description of materials placed in package

Comments: _____

Approximate Percent Full _____ Gross Weight _____ lb.

Person performing Waste Packaging _____ / _____

Signature Date

Section B

Note 1:	The surface dose rate at 5 cm from the surface of the waste package shall not exceed 10 mRem/hr.
Note 2:	Waste shall not have detectable (4×10^{-5} $\mu\text{Ci/cc}$) off-gassing tritium for shipment to EAV or MWSF.
RCO Survey Results:	_____ mRem/hr _____ dpm
Total ^{235}U :	_____ (Not to exceed 50 grams)
Total Curies:	_____ Heat Generation: _____ watts/ft ³
Tritium Gas:	_____ $\mu\text{Ci/cc}$

RCO _____ / _____

Signature Date

RCO _____ / _____

Signature Date

Figure 5 Waste Disposal Log Sheet

When the bag, in a 21 inch box, is full the GCO verifies the following concerning the package.

- The waste is appropriately packaged
- No prohibited items are included in the waste package
- No free liquids are visible
- CIF approved absorbents used to soak up any free liquids
- The waste package is free of holes and any signs of leakage
- The waste package weighs between seven and fifty pounds

If these conditions are met the bag opening is sealed with tape and the seams taped.

When a 55-gallon drum is full, request that the GCO verify the following.

- The waste is appropriately packaged
- Drum is free of holes, bulges, and signs of leakage
- The drum has a freeboard of at least 10% (3.5 inches from the top)

The drum openings are sealed and two orientation arrows are placed on opposite vertical sides of the drum. A pressure relief type device must be used to seal drums containing flammable or volatile liquids.

RCO performs and records on the Waste Disposal Log Sheet the results of a radiation and contamination survey. Refer to Figure 5.

Additionally, for radioactive waste, RCO conducts and records on the Waste Disposal Log Sheet the results of tritium off-gassing

The Waste Disposal Log Sheet and the Disposal Sheet Traceability Log are completed to indicate that the waste receptacle has been sealed.

All containers must be appropriately marked prior to placing any waste into the container. Marking of container is covered under Waste Container Marking and Labeling, later in this book.

CIF Acceptable and Prohibited Waste

The following are examples of acceptable waste for the CIF.

Braided polyethylene hose	Cardboard boxes
Cloth booties/Shoe covers	Cloth decon towels
Cloth laundry bags	Cloth waste bags
Cotton gauze	Cotton glove liners
Duct tape, masking tape	Non-PVC plastic sheeting
Non-PVC shoe covers	Non-PVC waste bags
Nylon rope	Oil/water absorbent pads
Paint brushes	Paper towels
Paper overalls	Plastic sleeving
Face Shields	Herculite
Insulation	Launderable tarps
Latex gloves	Miscellaneous papers
Modesty garments	Mop heads
Incidental Welding rods	Incidental respirator cartridge
Plastic tie wraps	Scrubber/buffer pads
Smear paper	Sweat bands
Step-off pads	Tacky rollers
Tygon tubing	

The following are examples of prohibited waste for the CIF.

- Aerosol cans, gas cylinders, bottles containing liquid
- Batteries
- Dirt, gravel
- Electrical Wire
- Explosives, pyrophoric waste, shock sensitive waste, and propellants
- High mercury sub-category waste ($>$ or $=$ 260 ppm Hg)
- Lab Packs
- Light bulbs and glass
- Medical waste (pathogenic or infectious waste)
- Metal reinforced hoses- breathing air hoses
- Newly generated waste with PVC shoe covers, PVC bags, or PVC sheeting
- Paint cans
- PCB waste ($>$ or $=$ 50 ppm PCB)
- Process ventilation HEPA filters with metal frames or fiberglass media
- Waste that consists of organic, debris-like materials (wood, paper, or cloth) contaminated with an inorganic metal waste (nails, metal scraps) $>$ 6.0 inches in diameter or length
- Transuranic waste (TRU)
- Waste containing any detectable beryllium

Non-Incinerable Solid Waste

Non-Incinerable item are those item listed as prohibited above. Non-incinerable waste is handled exactly like incinerable waste with a few exceptions. Refer to Figures 2 and 3. Those exceptions are the point of discussion of this section.

A 55-gallon drum is used for both solid and liquid waste receptacles. For solid waste the drum has a removable lid and locking ring; two bung hole drums are used for liquid waste. Establishment of receptacles, including Waste Disposal Log Sheet requirements (check non-

incinerable), labeling, placement of waste, and completion of Section A of the Waste Disposal Log Sheet are the same as for incinerable waste. Once the receptacle is full, the GCO verifies the following for all waste types.

- The waste is appropriately packaged
- No prohibited items are included in the waste package
- The waste package is free of holes, bulges, and signs of leakage.

For non-regulated waste only

- No free liquids are included in the waste package
- Associated waste is blue tagged - This is waste that looks as if it may have come from a radioactive source. It however, has never been in contact with radioactive materials.
- Special waste is not packaged with preapproved waste.

If the waste is Low-Level waste and will be sent to the E Area Vaults, the following additional items must be verified.

- Contains only solid waste
- Contains No Hazardous Waste
- Chelating agents $\leq 1\%$ of the total weight of the waste matrix
- Incidental quantities of free liquid are to be packaged with absorbent materials. Sufficient absorbent material to absorb two times the volume of free liquid present is placed in the area of the free liquid.

If the waste is mixed waste and will be sent to the Mixed Waste Storage Facility, the following additional items must be verified.

- No absorbent materials shall be used to absorb free liquid.
- Absorbent materials used for spill response and cleanup activities are acceptable.

If the waste is non-radioactive hazardous waste and will be sent to the Hazardous Waste Storage Facility, there are no additional verifications required.

Close-out of the waste receptacle including radiation surveys, completion of the Waste Disposal Log Sheet, and Disposal Sheet Traceability Log are the same as for incinerable waste.

Waste Container Markings and Labeling

After the waste receptacle is full, the GCO has verified its content and sealed the box or drum, the appropriate markings and labeling must be affixed. The marking and labeling will depend on the type and ultimate destination of the waste. The following describes those marking and labeling requirements, and any additional verifications that must be performed prior to final closure and labeling of the waste package.

Incinerable Waste Packaging

Solid incinerable waste is appropriately sealed in either a yellow (rad) or clear (non-rad) bag. The bag is placed in a 21 inch cardboard box and the box is sealed. A barcode label is placed on the top of the cardboard box, on either side of the flap. It should be placed as close to the center as possible without being placed across the flap. The label must be placed in an area of the box excluding a one inch border around the outside of the box. Refer to figure 6. The label must be applied flat, without wrinkles or folds that may distort the barcode elements from the overhead scanner. Additional labeling requirements are cover below.

Liquid incinerable waste, excluding bulk waste is sealed in a 55-gallon drum. A barcode label is placed on the top of the drum. It should be placed as close to the center as possible and not be placed across either of the drum bungs. The label must be applied flat, without wrinkles or folds that may distort the barcode elements from the overhead scanner..

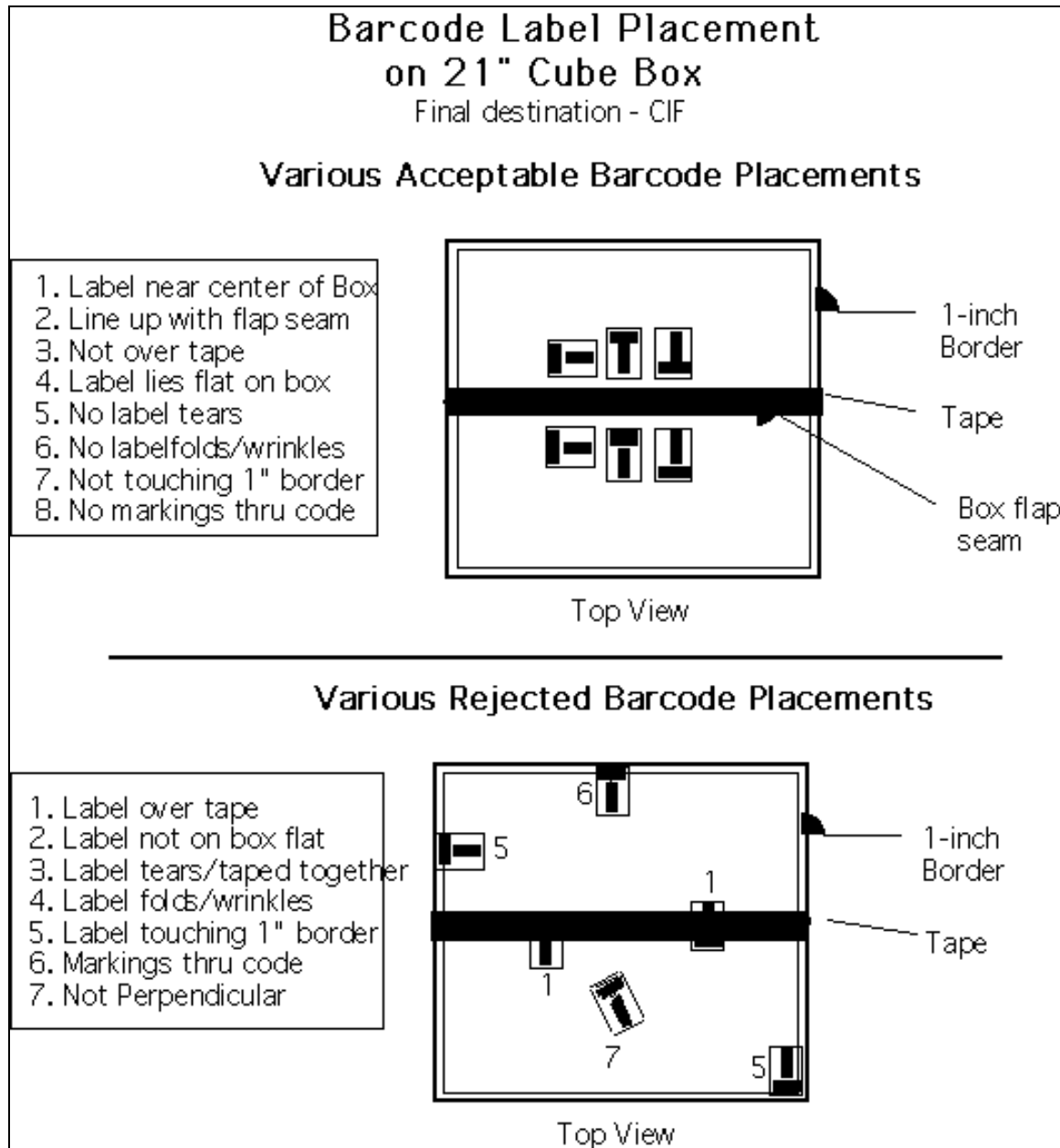


Figure 6 Barcode Label Placement

Non-Incinerable Waste Packaging

Solid non-incinerable waste is place in either a B-12, B-25, or 55-gallon drum, based upon its ultimate destination. For waste being sent to the Hazardous Waste Storage Facility the preferred container is a 55-gallon drum. B-12 and B-25 container may be accepted on a case-by-case basis. For waste being sent to the Mixed Waste Storage Facility or the E-Area Vaults, the preferred container is a B-12 or B-25 container. 55-gallon drum may be accepted on a case-by-case basis. Waste that is sent to the landfill should be placed in plastic bags. Additional labeling requirements are cover below.

Liquid non-incinerable waste is placed a 55-gallon drums. The drum is marked with two orientation labels placed on two opposite vertical sides. Additional labeling requirements are cover below.

Additional Marking and Labeling requirements

All 21 cardboard boxes, B-12, B-25, and 55-gallon drums use as either waste packages or shipping container must contain the following markings and labeling.

The container must be marked to identify the type of waste being placed in the container. All labeling and markings must be done in English, easy to read, and shall be colors that contrast with the waste container color. These markings shall be non-fading, non-smearing, and have a predicted 10-year life expectancy. All labels and markings must be located on the upper-half of the container on at least two opposite vertical sides.

Other than pre-printed labels, all markings placed on 55-gallon drums or waste container smaller than 2' X 2" X 2'9", shall be at least 1"(nominal) tall block letters; for larger container the markings shall be at least 2" (nominal) tall block letters. All markings shall use a coordinated color corresponding to the type of waste. Refer to Figure 7.

Waste Type	Identification Color
Non-regulated Waste	Green Dot and Green Lettering
Non-Radioactive Hazardous Waste	Orange Dot and Orange Lettering
Low-Level Waste	Yellow Dot and Yellow Lettering
Mixed Waste	Red Dot and Red Lettering

Figure 7 Waste Markings Color Coding

The following pre-printed labels are affixed to the waste container as appropriate.

DESCRIPTION	WASTE LABEL
Non-Regulated Waste	Affix a "Non-Hazardous Material" label
Hazardous Waste	Affix a "Hazardous Waste" label Identify the applicable EPA codes on the hazardous waste label
LDR	If the waste is hazardous waste that has not met the applicable treatment standards, Mark as LDR
Asbestos	Affix a "Danger Contains Asbestos" label
Radioactive	affix the appropriate radioactive label as follows.
55-gallon drum	two labels on opposite vertical sides
B-12/B-25	four labels, one on each vertical side of the container

For Incinerable Waste Only

Characteristic Waste	Mark with an EPA hazardous waste code of D
Listed	Mark with an EPA hazardous waste code of F, P, or U

Preparing Shipping Container For Shipment

Approved shipping containers include B-12 and B-25 Boxes, and 55-gallon drums. These containers are obtained by the GCO and come pre-numbered. The GCO enters the shipping container information into the Shipping Container Assignment Roster. Refer to Figure 8.

Release Date	Shipping Container Identification Number	Charge to Building Number	Container Type	Container ID Number	Signature of Performer	Shipping Date

Figure 8 Shipping Container Assignment Roster

LOADING SCHEDULE

		Loaded Package Numbers	
Container Type (Circle)	B-25 B-12 55-gal drum	_____	_____
		_____	_____
Container No.	_____	_____	_____
		_____	_____
Container ID Color	_____	_____	_____
		_____	_____
Building Number	_____	_____	_____
		_____	_____
Waste Stream Number	_____	_____	_____

Check all that applies

1. ☐ Process Waste
2. ☐ D&R Waste, Project No. _____
3. ☐ Construction Project, Project No. _____
4. ☐ Housekeeping Waste
5. ☐ Asbestos
6. ☐ Plant Equipment Transfer (P.E.T.) No. _____
7. ☐ Other _____

NOTE: Shipping containers shall not exceed the following: B-25 5,500 lbs., B-12 5,000 lbs., B-6 6,000 lbs., DOT 17C 500 lbs., DOT 17E 500 lbs.

Total ²³⁵U _____ (Not to exceed 50 grams)

Total Curies _____

GCO _____ / _____

Signature

Date

Approval to seal (GCO) _____ / _____

Signature

Date

Figure 9 Loading Schedule

The shipping container is appropriately marked as identified above, before placing any waste in the container. As with waste receptacles, all waste must be segregated and placed in the proper shipping container. As sealed waste packages become ready for shipment, the waste is placed in the shipping and the Loading Schedule (Figure 9) is completed for the addition of the waste package. The Loading Schedule identifies the shipping container and lists all waste package numbers loaded into the shipping container. Before placing the waste in the shipping container, the Waste Disposal Log Sheet is removed and forwarded to the GCO.

When the Shipping Container is full, the GCO verifies that the void space is minimized and that the container is absent of free standing liquids.

RCO conducts a radiation and contamination survey. The survey results are logged on the Loading Schedule and on the radioactive materials label, on the outside of the shipping container. The container is sealed using the lid.

All 55-gallon drums will be palletized.

Empty Containers

For a container to be considered empty it must meet the following conditions.

- Not have contained acute waste (EPA codes P001 - P123), and
- All waste removed using practices commonly used to remove materials, and
- No more than one inch of residue remains on the bottom, or
- No more than 3% of total container capacity remains for containers less than or equal to 110 gallon or more than .3% for all containers greater than 110 gallons.

Container having contained acute waste must be triple rinsed using the appropriate solvent before the container can be classified as empty. Note: The waste from rinsing the container must be treated as hazardous waste, carrying all EPA hazard codes as the waste previously contained.

Complete the Empty label with all information from the previous content and affix to the container.

Waste Storage

Waste must be stored such that the waste remains segregated according to the waste type (i.e., non-regulated, NRHW, LLW, or MW). The containers must be placed in an approved staging area. Staging Areas will be cover under Satellite Accumulation Area and Staging Area Requirements, latter in the book.

Waste Transfer

When the waste is ready for shipment, the GCO schedules the waste for shipment by entering the waste data into the Waste Information Tracking System. The containers are surveyed by RCO and the appropriate RadCon label affixed to the container. The original paperwork concerning the shipment accompany the waste transfer. The containers are loaded per the shipping manifest and the driver signs the manifest. The transfer paperwork is filed by the GCO.

Summary

Waste generated at the CIF must be identified, segregated, and packaged to maintain the integrity of the waste stream. The waste is separated according to its characteristics of (1) Incinerable; (2) Radiological; (3) Hazardous; and (4) physical states. Liquid waste is packaged in 55 gallon drums; while solid waste is packaged in 21" cardboard boxes (incinerable) or in 55-gallon drums (non-incinerable). When the container is full, the GCO verifies that the waste meets the requirements of the TSD facility. The waste is placed in shipping containers for shipment to one of the following TSD facilities: (1) E-Area Vaults; (2) Hazardous Waste Storage Facility; (3) Mixed Waste Storage Facility; or (4) the CIF.

SATELLITE ACCUMULATION AREA AND STAGING AREA REQUIREMENTS

- ELO 2.01 Define the following terms.
- a. Satellite Accumulation Area
 - b. Staging Area
- ELO 2.02 Describe the physical requirements for establishing a Satellite Accumulation Area, including any time requirements place on the collection/removal of waste.
- ELO 2.03 Describe the relationship between a waste receptacle and a Satellite Accumulation Area.
- ELO 2.04 Describe the physical requirements for establishing a Staging Area, including any time requirements place on the collection/removal of waste.
- ELO 2.05 Describe the relationship between a waste container and a Staging Area.
- ELO 2.06 Describe the personnel enter requirements for a Staging Area.
-

Satellite Accumulation Area

Satellite Accumulation Areas (SAA) are established for the accumulation of hazardous or mixed waste, unless the waste is sent directly to a staging area, an interim status, or permitted storage facility. The organization generating the hazardous waste is responsible for its proper management until it is accepted by solid waste management for storage. Only personnel trained in the operation of SAA may gain access to the area.

Satellite Accumulation Areas should be established directly adjacent to the point of generation, or justification written to justify the location. The Satellite Accumulation Area Custodian is responsible to establish and operate the SAA. The SAA should be located away from the following.

- Ignition sources, if contains ignitable waste
- Liquid waste away from a drain, unless secondary containment is provided

The Satellite Accumulation Area Shall be posted with a sign legible from 25 feet, with black letters on a yellow background. Refer to Figure 10. Additionally, all SAA will be posted as “No Smoking” where ignitable waste is stored and “Authorized Use Only” for all unlocked SAA. For mixed waste, radiological posting requirements must be met. When possible the area should be designated by one of the following methods.

- Fencing or marking the outer perimeter with posts and chain or rope.
- A painted or taped border may be used to identify the boundary

HAZARDOUS WASTE
Satellite Accumulation Area (SAA)
SAA Name or Number: _____
Area Custodian: _____ Phone: _____
Alternate Custodian: _____ Phone: _____
RCO Contact: _____ Phone: _____
(For Mixed Waste Only)

Figure 10 SAA Posting Requirement

The SAA Custodian ensures that the SAA is used only for the accumulation of authorized waste. Controls are implemented to limit unauthorized use of the SAA such that the following is met.

- SAA are within direct sight of the operator whose process is generating the waste; or
- the container(s) is locked or container(s) is in a locked area.

Caution 1 Transfer of hazardous waste from one SAA to another is prohibited

Caution 2 Transfer of hazardous waste from a Staging Area to a SAA is prohibited

SAA custodian ensures that waste in excess of 55-gallon drum is removed within three days to a Staging Area, an interim status, or permitted storage facility.

All waste and waste container must be segregated within the SAA. Waste containers must be closed unless adding waste to the container.

At the CIF SAA will be used to house the waste receptacles. The requirements for establishing and marking a receptacle still apply. The SAA only controls the area around the receptacles.

Staging Area

Staging Areas (SA) are established by the waste generator for accumulation and holding unlimited quantities of hazardous or mixed waste, up to 90 days.

The Staging Area shall be posted with a sign legible from 25 feet, with black letters on a yellow background. Refer to Figure 11. Additionally, all SA will be posted as “No Smoking” where ignitable waste is stored and the location of the contingency plan. For mixed waste, radiological posting requirements must be met. When possible the area should be designated by one of the following methods.

- Fencing or marking the outer perimeter with posts and chain or rope.
- A painted or taped border may be used to identify the boundary

<p style="text-align: center;">HAZARDOUS WASTE</p> <p style="text-align: center;">STAGING AREA (SA)</p> <p>SA Name or Number: _____</p> <p>SA Custodian: _____ Phone: _____</p> <p>Alternate Custodian: _____ Phone: _____</p> <p style="text-align: center;">RCO CONTACT (For Mixed Waste SA Only)</p> <p>Name: _____ Phone: _____</p>
--

Figure 11 SA Area Posting Requirement

Staging Areas must be designed, constructed, maintained, and operated to minimize the possibility of the following.

- Fire
- Explosion
- Any unplanned release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or environment.

Secondary containment is required for all SAs containing liquid hazardous waste.

Aisle space must allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.

Containers can not be stacked more than two high, without prior approval.

Unless it can be demonstrated to SCDHEC that none of the hazards posed by waste handling at the facility could require a particular kind of equipment, all SAs must be equipped with the following.

- An internal communications or alarm system capable of providing immediate emergency instructions to facility personnel.
- A device, such as a telephone immediately available at the scene of operations or a hand-held two way radio, capable of summoning emergency assistance.
- Portable fire extinguisher.
- Spill control equipment.
- Decontamination Equipment
- Water at adequate volume and pressure to supply water streams, foam producing equipment, automatic sprinklers, or water spray systems.

Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee.

If there is ever just one employee in the SA, the individual must have immediate access to a device capable of summoning external emergency assistance.

SAs must be inspected every seven days, even when empty, and the inspection documented.

If unforeseen, temporary, and uncontrolled circumstances make it necessary for hazardous waste to remain in the SA longer than 90 days, an extension of up to 30 days may be granted by SCDHEC on a case-by-case basis.

At the CIF SA will be used to house the waste packages awaiting shipment. The requirements for establishing and marking a waste packages still apply. The SA only controls the area around the receptacles.

Summary

Satellite Accumulation Areas provide temporary storage for mixed and hazardous waste, prior to shipment to a staging area, an interim status, or permitted storage facility. All personnel entering a SAA must be trained in its operation. The SAA must be clearly marked and identified with postings. Once a waste container is full, it must be removed from the SAA within three days.

Staging Areas provide temporary storage of mixed and hazardous waste for up to ninety days. . All personnel entering a SAA must be trained in its operation. The SAA must be clearly marked and identified with postings. Personnel entering these areas must have means of communicating with facility personnel at all times. SA must be inspected and the inspection documented every seven days.

WASTE HANDLING DEFINITIONS

To easily and completely understand the waste handling process, it is important to become familiar with waste handling terminology.

Following are a number of terms and definitions used in this course:

<i>Acute Hazardous</i>	<i>Waste having an EPA/SCDHEC Hazardous Waste Number of P001 through P123.</i>
<i>Associated Waste</i>	<i>Any waste items from a clean area, Radiological Buffer Area (RBA), or Radioactive Management Area (RMMA) with radiological markings (i.e., trifoil); identified with the words “Rad” or “Radioactive”; yellow and magenta items (e.g., rope, tape) that are not radiologically contaminated..</i>
<i>At or Near</i>	<i>Adjacent to the point of waste generation.</i>
<i>Certified Waste</i>	<i>Waste that has been confirmed to comply with specific waste acceptance criteria under an approved waste certification program.</i>
<i>Characteristic Waste</i>	<i>Has an EPA Hazardous Waste Code of D.</i>
<i>Compactable Waste</i>	<i>Waste that is able to be volume reduced without damaging the compactor or purple B-25.</i>

<i>Corrosive</i>	<i>Aqueous waste with a pH greater than or equal to 2.0 and less than or equal to 12.5 or a liquid that corrodes steel greater than 0.25 inches per year. EPA/SCDHEC Hazardous Waste Number of D002.</i>
<i>Dike</i>	<i>Embankment or ridge of either natural or manmade materials used to prevent the movement of liquids, sludges, solids, or other materials.</i>
<i>Environmentally Derived Waste</i>	<i>Waste resulting from natural events such as storms. This includes rain water, dust, and debris.</i>
<i>Generator</i>	<i>See Waste Generator</i>
<i>Hazardous Waste</i>	<i>Waste listed in 40 CFR 261/R.61.79.261 or that exhibits one or more of the characteristics identified in the regulations: ignitable, corrosive, reactive, or toxic. This waste is regulated under the Resource Conservation and Recovery Act (RCRA) by the South Carolina Department of Health and Environmental Control (SCDHEC) and the Environmental Protection Agency (EPA).</i>
<i>Ignitable</i>	<i>Waste that is (1) a liquid, other than an aqueous solution containing less than 24 percent alcohol Btu volume and has a flash point less than 140 degrees Fahrenheit or; (2) not a liquid and is capable under standard temperature and pressure, of causing fire through friction, adsorption of moisture or spontaneous chemical change and, when ignited, burns so vigorously and persistently that it creates a hazard or; (3) an oxidizer. An EPA/SCDHEC Hazard Waste Number D001.</i>

<i>Incidental Waste</i>	<i>A waste that is generated by maintenance activities (includes job control waste and excess equipment), spills, and leaks.</i>
<i>Incinerable Waste</i>	<i>Combustible waste that contains organic constituents and meets the CIF Waste Acceptance Criteria (WAC).</i>
<i>Incompatible Waste</i>	<i>Hazardous waste that is unsuitable for placement in a particular device or facility because it may corrode or decay the containment material or is unsuitable for commingling with another waste or material because commingling might produce heat, pressure, fire, explosion, violent reaction, toxic dust, fumes, mist, gases, or flammable fumes.</i>
<i>Land Disposal Restrictions (LDR)</i>	<i>Regulations which restrict the land disposal of all hazardous waste and specify strict treatment standards to be met before these wastes can be land disposed..</i>
<i>Listed Hazardous Waste</i>	<i>A solid waste defined as hazardous waste when the waste has a hazardous waste code of F, P, or U. Could have a K waste code; however, could not be accepted at the CIF.</i>
<i>Low-Level Waste</i>	<i>Radioactive waste with an activity of less than 10 nCi/g.</i>
<i>Mixed Waste</i>	<i>A waste that contains both radioactive and hazardous constituents</i>
<i>Non-Regulated Waste</i>	<i>Waste which reads no more than background when monitored in an area with low background radiation and is NOT designated hazardous by South Carolina Hazardous Waste Management Regulations (SCHWMR).</i>

Non-Radioactive Hazardous Waste *Hazardous waste which reads no more than background when monitored in an area with low background radiation.*

Radioactive Waste *Waste which is contaminated with radionuclides.*

Reactive *Waste which (1) is normally unstable and readily undergoes violent changes without detonation; (2) reacts violently with water; (3) forms potentially explosive mixtures with water; (4) when mixed with water, generates toxic gasses, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment or; (5) is cyanide or sulfide bearing waste which, when exposed to pH conditions between 2.0 and 12.5 can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment or; (6) is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement or; (7) is readily capable of detonation or explosion decomposition or reaction at standard temperature and pressure or; (8) is a forbidden explosive. Has an EPA/SCDHEC Hazardous Waste Number of D002.*

Satellite Accumulation Area *An established area for the accumulation of hazardous or mixed waste.*

Satellite Accumulation Area Custodian *Individual with responsibility for satellite accumulation area operations.*

Secondary Containment *Dike or other method (e.g., sandbags or plastic sheets) used to prevent liquid waste from reaching the environment should a container leak. It is sized to contain at least 100% of the largest capacity of the largest container or 10% of the total volume of all containers, whichever is larger.*

Secondary Waste *A waste that is a by-product of the waste treatment process. This includes ashcrete and solidified blowdown.*

Special Waste *nonresidential or commercial solid wastes, other than hazardous wastes, that are difficult or dangerous to handle and require unusual management at municipal solid waste landfills. (E.g., pesticides, liquid or sludge wastes, industrial process waste, pollution control process waste, residue or debris from a spill or facility cleanup, asbestos, non-hazardous chemical waste) and large containers or drums.*

Solid Waste *Any material that is to be discarded or for which there is no further use. Solid Waste does not refer to the actual physical state of the waste.*

Staging Area *Designated area for accumulation of hazardous or mixed waste of unlimited quantity for up to ninety days.*

Toxic *Waste that (1) contains any commercial or manufacturing chemical product with an EPA/SCDHEC Hazardous Waste Number of U001 through U411.*

Toxicity Characteristic *Waste containing any contaminant above the regulated concentration. Has an EPA/SCDHEC Hazardous Waste Number of D004 through D043*

Treatment *Action taken to change the physical, chemical, or biological characteristics or composition of waste, to neutralize, recover energy or materials from it, reduce toxicity or volume, or make it safer for transportation, storage, or disposal.*

Waste Package	<i>The waste, waste container, and any absorbent material or overpack container that are intended for storage or disposal as a unit.</i>
Waste Generator	<i>An individual, facility, corporation, government agency, or other institution that produces waste materials for treatment, storage, or disposal.</i>
Waste Minimization	<i>Source reduction, recycling, and treatment activities that reduce the volume and/or toxicity of waste.</i>
Waste Receptacle	<i>A bin or other temporary storage vessel used for collecting waste before the waste is tagged to be placed in a container.</i>
Waste Stream	<i>A unique waste form or type that encompasses all aspects of the waste from generation to storage or disposal ... – a result of the waste having come from a similar source with the same (or very similar) physical and chemical characteristics</i>